

WHAT IS CLAIMED IS:

1. A method of hand-off for a mobile terminal from a first access point to a second access point in a wireless local area network (WLAN), the method comprising:

measuring in a mobile terminal signal to noise ratio (SNR) of first RF signals received from the first access point;

if the measured SNR of the first RF signals exceeds a first threshold, measuring SNR of RF signals received from a plurality of candidate access points in a roaming candidate list stored on the mobile terminal;

determining from measured SNRs of the candidate access points whether any of the measured SNR exceed a second threshold, and if so, identifying those candidate access points in a new association list;

selecting one of the candidate access points in the new association list; and

attempting to associate the mobile terminal to the selected candidate access point.

2. The method in accordance with Claim 1 further comprising:

associating the mobile terminal to the first access point in the WLAN; and

receiving from the first access point the roaming candidate list identifying the plurality of candidate access points in the WLAN.

30 3. A mobile terminal operable for wireless connection to one or more access points in a wireless local area network (WLAN), the device comprising:

means for measuring signal to noise ratio (SNR) of

first RF signals received from the first access point; if the measured SNR of the first RF signals exceeds a first threshold, means for measuring SNR of RF signals received from each of a plurality of candidate access points in a roaming candidate list;

means for determining from measured SNRs of the candidate access points whether any of the measured SNR exceed a second threshold, and if so, identifying those candidate access points in a new association list;

10 means for selecting one of the candidate access points in the new association list; and

means for attempting to associate the mobile device to the selected candidate access point.

15 4. The method in accordance with Claim 3 further comprising:

means for associating the mobile terminal to a first access point in the WLAN; and

20 means for receiving from the first access point the roaming candidate list identifying the plurality of candidate access points in the WLAN.

5. A state machine for use by a mobile terminal in a wireless area network, the state machine comprising:

25 a first state in which the mobile terminal is associated with a first access point in the network and signal to noise ratio (SNR) of first RF signals received from the first access point are measured;

30 a second state in which SNR of RF signals received from a plurality of candidate access points in a roaming candidate list are measured and it is determined from measured SNRs of the candidate access points whether any of the measured SNRs exceeds a second threshold, and if so,

identifying those candidate access points in a new association list, the state machine transitioning from the first state to the second if the measured SNR of the first RF signals exceeds a first threshold;

- 5 a third state in which one of the candidate access points in the new association list is selected and an attempt is made to associate the mobile terminal to the selected candidate access point, the state machine transitioning from the second state to the third state if
10 there is at least one candidate access point in the new association list.

6. The state machine in accordance with Claim 5 further comprising:

- 15 a fourth state in which a plurality of channels associated with a plurality of access points are scanned to determine SNRs for each of the plurality of access points, one of the plurality of access points is selected and the mobile terminal attempts to associate to the selected
20 access point, the state machine transitioning from the fourth state to the first state when the mobile terminal associates with the selected access point.

7. A mobile terminal for communicating with one or
25 more access points in a wireless local area network (WLAN),
the device comprising:

- a processor;
 a transceiver coupled to the processor;
 an antenna coupled to the transceiver for receiving
30. and transmitting RF signals from and to the one or more access points in the WLAN; and

 wherein the processor is operable for:

 measuring signal to noise ratio (SNR) of first RF

signals received from the first access point,
if the measured SNR of the first RF signals
exceeds a first threshold, measuring SNR of RF signals
received from each of a plurality of candidate access
points in a roaming candidate list stored in the
mobile terminal,

5

determining from measured SNRs of the candidate
access points whether any of the measured SNR exceed a
second threshold, and if so, identifying those
candidate access points in a new association list,
10

selecting one of the candidate access points in
the new association list, and

attempting to associate the mobile device to the
selected candidate access point.

15

8. The mobile terminal in accordance with Claim 7
wherein the processor is further operable to:

associate the mobile terminal to a first access point
in the WLAN; and

20

receive from the first access point the roaming
candidate list identifying the plurality of candidate
access points in the WLAN.

25

9. A wireless local area network (WLAN), the WLAN
comprising:

a plurality of sets of access points operable for
communicating wirelessly with one or more remote client
devices, each set of access points defines a cell having a
predefined communication coverage area within the WLAN;

30

a plurality of switches communicatively coupled to
access points; and

wherein the communication coverage area of each
defined cell is less than about 1000 hundred square feet

and the access points in a first cell are operable for transmitting a roaming candidate list to a mobile device associated with one of the access points in the first cell, the list identifying one or more neighborhood access 5 points.